

IN THE CLAIMS

The claims are amended as follows:

1.-18. (Cancelled)

19. (Original) A method of forming a field emitter device on a substrate, the method comprising:
forming a first insulating layer on the substrate;
forming a conducting gate layer having a top surface and at least one side surface on the first insulating layer;
forming a field emitter tip on the substrate adjacent the first insulating layer and the conducting layer; and
forming a second insulating layer on at least one side surface of the conducting gate layer adjacent the field emitter tip to prevent arcing between the field emitter tip and the conducting gate layer.

20. (Original) The method of claim 19, wherein the forming a first insulating layer comprises:
blanket depositing a first insulating material over the substrate; and
patterning the first insulating material.

21. (Original) The method of claim 19, wherein the forming a first insulating layer comprises:
growing a first insulating material on the substrate.

22. (Original) The method of claim 19, wherein first insulating material comprises one of silicon oxide, silicon nitride and silicon oxynitride.

23. (Original) The method of claim 19, wherein the forming a second insulating layer comprises:

blanket depositing a second insulating material over the conducting gate layer;
and
patterning the second insulating material.

24. (Original) The method of claim 19, wherein the forming a second insulating layer comprises:

selectively depositing a second insulating material on the conducting gate layer.

25. (Original) The method of claim 19, wherein the forming a second insulating layer comprises:

selectively depositing a second insulating material on the gate conducting layer
and the first insulating layer.

26. (Original) The method of claim 19, wherein the forming a second insulating layer comprises:

depositing a second insulating material on the gate conducting layer using the first insulating layer and the conducting gate layer as a shadow mask.

27. (Original) The method of claim 19, wherein the forming a second insulating layer further comprises:

forming the second insulating material over the top surface of the conducting gate layer.

28. (Original) The method of claim 19, wherein the second insulating layer comprises silicon oxide, silicon oxynitride or silicon nitride.

29. (Original) The method of claim 19, wherein the forming the conducting gate layer comprises:

depositing a conducting material on the first insulating layer; and
patterning the conducting material to form the conducting gate layer.

30. (Original) The method of claim 29, wherein conducting material comprises a refractory metal.

31. (Original) The method of claim 19, wherein the forming a field emitter tip comprises:

depositing a conducting material on the substrate; and
patterning the conducting material.

32. (Original) The method of claim 31, wherein conducting material comprises a refractory metal.

33. (Original) The method of claim 19, wherein the forming a field emitter tip comprises:

forming one of a nanotube and a nanowire on the substrate.

34. (Original) The method of claim 19, wherein the forming a field emitter tip comprises:

forming the field emitter tip after forming the second insulating layer.

35. (Original) The method of claim 19, wherein the forming a second insulating layer comprises:

forming an anodic oxide on the conducting gate layer.

36. (Original) The method of claim 19, wherein the forming a second insulating layer comprises:

forming the second insulating layer on the at least one side surface, but not on the top surface.

37. (Original) The method of claim 19, wherein the forming a first insulating layer and the conducting gate layer comprises:

forming a first insulating material;
forming a conducting gate material;
patterning the first insulating material and the conducting gate material at the same time.

38.-41. (Cancelled)

42. (Currently amended) A method of forming a field emitter device on a substrate, the method comprising:

forming a first insulating layer on the substrate;
forming a conducting gate layer having a top surface and at least one side surface on the first insulating layer;
forming a field emitter tip on the substrate adjacent the first insulating layer and the conducting layer; and
forming an arc prevention layer substantially covering ~~on at least one side surface~~ of the conducting gate layer adjacent the field emitter tip to prevent arcing between the field emitter tip and the conducting gate layer.

43. (Original) The method of claim 42 wherein the arc prevention layer comprises a semiconductor material.